UNITED STATES PATENT AND TRADEMARK OFFICE

14

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/991,796	11/23/2001	George Jackowski	2132.109	5613

21917 7590 03/09/2004

MCHALE & SLAVIN, P.A.
2855 PGA BLVD
PALM BEACH GARDENS, FL 33410

EXAMINER	
CHERNYSHEV, OLGA N	
ART UNIT	**PAPER NUMBER**
1646	

DATE MAILED: 03/09/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/991,796	JACKOWSKI ET AL.	
	Examiner	Art Unit	
	Olga N. Chernyshev	1646	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *22 November 2003*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1 and 39-46* is/are pending in the application.

4a) Of the above claim(s) *39-46* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. Claim 1 has been amended, claims 2-38 have been cancelled and claims 39-46 have been added as requested in the amendment of Paper filed on November 22, 2003. Claims 1 and 39-46 are pending in the instant application.

2. Newly submitted claims 39-46 are directed to an invention that is independent or distinct from the invention originally claimed for the following reasons: claims 39-43 are directed to methods of diagnosing Type II diabetes, classified in class 435, subclass 4, for examples; and claims 44-46 are directed to a diagnostic kit, classified in class 530, subclass 387.1, for example. Invention of claim 1 and the invention of claims 39-46 are related as product and process of use. The inventions can be shown to be distinct if either or both of the following can be shown: (1) the process for using the product as claimed can be practiced with another materially different product or (2) the product as claimed can be used in a materially different process of using that product (MPEP § 806.05(h)). In the instant case the peptide of claim 1 could be used in an entirely different manner such as for the production of antibodies rather than in the methods of claims 39-43 or in the kit of claims 44-46.

Since applicant has received an action on the merits for the originally presented invention, this invention has been constructively elected by original presentation for prosecution on the merits. Accordingly, claims 39-46 are withdrawn from consideration as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03.

Claim 1 is under examination in the instant office action.

3. Applicant's argument of the decision *In re Ochiai* (pages 11-12 of the Response) is noted but is not deemed persuasive, as PTO practice in view of that decision is directed to rejoinder of claims after allowable subject matter has been indicated, and not to withdrawal of restriction requirements. Applicant is advised that at such time as elected product claim(s) are indicated as being allowable, rejoinder of claims drawn to methods of using such may be requested under 35 U.S.C. § 103(b) pursuant to the procedures set forth in the Official Gazette notice dated March 26, 1996 (1184 O.G. 86). Such rejoinder is *not* tantamount to a withdrawal of the restriction requirement.

4. The Text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

5. Any objection or rejection of record, which is not expressly repeated in this action has been overcome by Applicant's response and withdrawn.

6. Applicant's arguments filed on November 22, 2003 have been fully considered but they are not deemed to be persuasive for the reasons set forth below.

Claim Rejections - 35 USC § 112

7. Claim 1, as amended, stands rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement for those reasons of record in section 5 of Paper No. 12. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to use the invention.

Applicant submits that claim 1, as amended is limited to specific sequences that are diagnostic for Type II diabetes and, further, that "[a]pplicants are not required to explain the disease process in type II diabetes; applicants only required to show that the claimed peptides are indicative of type II diabetes (see MPEP 2165.03)" (top at page 17 of the Response). Applicant is advised that MPEP 2165.03 relates to the best mode requirement of 35 U.S.C. 112, first paragraph, which is different from the instant rejection, lack of enablement (see MPEP 2165.02). However, the Examiner agrees that it is not necessary that Applicant understands or discloses the mechanism by which the invention functions. Nevertheless, in the absence of such an understanding, such as in the instant case, and in view of the absence of art recognition of any specific association of the polypeptide of SEQ ID NO: 1 or SEQ ID NO: 4, which are fragments of fibronectin precursor protein, with Type II diabetes, as well as the lack of guidance on how to use peptides of SEQ ID NO: 1 and SEQ ID NO: 4 for diagnosis of Type II diabetes, a person skilled in the art would have to engage in undue experimentation, with no assurance of success.

Applicant further traverses the rejection on the premises that "mass spectrometric and chromatographic techniques are well-known to one of skill in the art, thus [...] one of skill in the art would know how to carry out the protocols in the instant disclosure" (page 17, last paragraph of the Response). The Examiner fully agrees with this statement. However, the issue at hand remains is not the ability of one to "carry out the protocol" but the ability of one to use the invention with a reasonable expectation of success. The skill in the art is high and it is obvious that no undue experimentation would be required for a skilled artisan to follow any of the protocols presented in the instant specification. However, because the assertion of association of the instant peptides with Type II diabetes is not supported by any evidence of record, a skilled

artisan would have to resort to substantial undue experimentation to discover how to use the claimed peptides for diagnostic purposes. The Examiner maintains the position, which was fully explained in the previous office action, that the instant specification, as filed, fails to provide any evidence or sound scientific reasoning that would support a conclusion that the presence of isolated peptides consisting of SEQ ID NO: 1 or SEQ ID NO: 4 would provide diagnosis of Type II diabetes.

Applicant argues that comparison of the lanes shown in Figure 1 and 3 between serum samples of patients having history of Type II diabetes and normal control "supports the hypothesis of the instant inventors wherein fibronectin is fragmented during the disease process of Type II diabetes since the fragmented fibronectin is identified from the lighter bands corresponding to bands 1 of healthy patients"" (page 19, first paragraph of the Response). However, analysis of the data provided in Figure 1 appears to be in conflict with Applicant's statement. Figure 1 is a photograph of a gel containing 10 standard lanes. Lanes 1-4 are normal samples, 5-8 are Diabetes Type II, lane 9 appears to be another control or is designated for molecular weight standards. Band 1 is clearly shown in four normal controls and one diabetes sample, and it is shown with less intensity in three diabetes samples. Analysis of band 1 in Figure 3 appears to be complicated because band 1 is practically indistinguishable in normal control samples. Therefore, because the instants specification does not provide precise disclosure or explanation on how to analyze the data obtained by the instant protocol, one skilled in the art would clearly have to resort to substantial amount of undue experimentation in order to be able to use the instant claimed peptides of SEQ ID NO: 1 and SEQ ID NO: 4 as a marker for Type II diabetes.

The Declaration of Jackowski under 37 CFR 1.132 filed September 24, 2003 is insufficient to overcome the rejection of claim 1 for the following reasons. The Declaration provides additional explanation on how to identify and analyze "differences in the bands appearing in diseased and healthy patients" (section 4 of the Declaration). "Since the band appeared darker in the healthy sample, the corresponding lighter band in the diseased was chosen for excision and sequencing. It is standard laboratory practice to sequence peptides by mass spectrometry". Thus, it was discovered that fibronectin precursor protein corresponding to Type II diabetes sample appeared as fragments, which included peptides of SEQ ID NO: 1 and 4. It was further asserted that peptides of SEQ ID NO: 1 and 4 are predictive of Type II diabetes. Therefore, it appears that, first, the normal and diseases samples have to be evaluated for "lightness" or any difference in intensity of band 1, then the lighter band is chosen for excision and sequencing according to the provided protocol. In view of the absence of information of the absence or presence of peptides of SEQ ID NO: 1 and 4 in normal controls and, most importantly, total absence of working examples of factual diagnosis of Type II diabetes using the disclosed protocol, such as cases when peptides of SEQ ID NO: 1 or 4 were found in samples of patients, which were further diagnosed with Type II diabetes (positive control), and not found in samples of patients diagnosed with other diseases or pathological conditions (negative control), a skilled artisan would have to resort to a substantial amount of undue experimentation to discover how to use the claimed biopolymer markers of SEQ ID NO: 1 and SEQ ID NO: 4 in diagnosis of Type II diabetes.

Applicant further argues that the method of analysis of the samples "requires identification of differences in the samples of the disease state versus the samples of the non-

disease state. Such simple analysis does not require "undue experimentation"" (top at page 21 of the Response). Accordingly, it appears that in order to use the instant claimed peptides for diagnosis of Type II diabetes, samples must be already identified as normal or Type II diabetes samples, after which "[t]he relationship is observed from a comparison of disease samples to normal samples". One skilled in the art readily recognizes that diagnosis of a disease assumes first finding of a distinguishing symptom, such as a specific marker in a sample, which leads to identification of a specific pathological condition.

Thus, in view of the lack of teachings found in the prior art or presented in the instant disclosure as set forth earlier, and also the total absence of the working examples, the instant specification is not found to be enabling for use of peptides of SEQ ID NO: 1 and SEQ ID NO: 4 for diagnosis of Type II diabetes. It would require undue experimentation and making a substantial inventive contribution for the skilled artisan to discover how to use Applicants' invention as currently claimed.

Conclusion

8. No claim is allowed.

9. This application contains claims 39-46 drawn to an invention nonelected by original presentation Paper No. 10. A complete reply to the final rejection must include cancellation of nonelected claims or other appropriate action (37 CFR 1.144) See MPEP § 821.01.

10. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Olga N. Chernyshev whose telephone number is (571) 272-0870. The examiner can normally be reached on Monday to Friday 9 AM to 5 PM ET.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Yvonne Eyler can be reached on (571) 272-0871. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Certain papers related to this application may be submitted to Technology Center 1600 by facsimile transmission. Papers should be faxed to Technology Center 1600 via the PTO Fax center located in Crystal Mall 1 (CM1). The faxing of such papers must conform with the notices published in the Official Gazette, 1156 OG 61 (November 16, 1993) and 1157 OG 94 (December 28, 1993) (see 37 C.F.R. § 1.6(d)0. NOTE: If Applicant *does* submit a paper by fax, the original signed copy should be retained by Applicant or Applicant's representative. NO DUPLICATE COPIES SHOULD BE SUBMITTED so as to avoid the processing of duplicate papers.

Official papers filed by fax should be directed to (703) 872-9306. If this number is out of service, please call the Group receptionist for an alternative number. Faxed draft or informal communications with the examiner should be directed to (571) 273-0870. Official papers should NOT be faxed to (571) 273-0870.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Olga N. Chernyshev, Ph.D. OC

JOHN ULM
PRIMARY EXAMINER
GROUP 1600